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ABSTRACT

This document presents data on class sizes in the universities in Ontario. Four major disciplines were covered by the survey that elicited the data: humanities, biological sciences, physical sciences, and social sciences. The data are further broken down into method of teaching, i.e., lecture, seminar, tutorial or laboratory. Each activity of each course is capable of generating three descriptive values. If all activities are examined in these three ways, three distinct distributions can be formed. For each activity of each course these three values are: (1) number of course sections; (2) number of section hours per week (derived by multiplying the number of sections by the hours per week of scheduled activity); and (3) number of student hours per week (derived by multiplying the number of students by the hours per week of scheduled activity). The data given are for the fall term, 1969. (Author/HS)

ED 069223

ANALYSIS OF SECTION SIZES

FALL 1969

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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HE 003 565

Committee of Presidents of
Universities of Ontario,
Research Division,
January, 1971.

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At the 53rd meeting of the Committee of Presidents of Universities of Ontario on December 16, 1969, Dr. D. T. Wright, Chairman of the Committee on University Affairs indicated that he would "like to see (measured)...the specturm of class sizes in universities..." In April 1970 at the 57th meeting of the Committee of Presidents it was agreed that this project should be undertaken and coordinated by the Research Division of the Committee of Presidents. This paper presents an analysis at the system level of the data collected for this project. An additional paper is being prepared in cooperation with university personnel proposing a methodology for continuing the study in the future.

Basic Data

The data are based upon the instructional activities of the Fall term 1969. Appendix 1 contains the format and instructions that were distributed to the universities for collection of the basic data. Research Division personnel visited the universities to discuss special problems in collection and presentation of information. From these visits it was learned that there were limitations in the reliability of certain elements of the data. While these limitations do not seriously restrict the interpretation of the results as presented they should be acknowledged because they indicate the nature of the data and explain partially the manner in which the parameters were defined.

For our purposes the most significant of these limitations was that pertaining to the "year level". The definition for this element indicated that the year level of a course was to apply to the year-in-programme of the students (or majority of students) enrolled in the course. Universities observed that many programmes were not defined according to year levels but were open in the sense that students could choose their own order of completing the required courses, i.e., courses could be taken in any year.

A less serious limitation in the basic data pertained to the types of instruction categories. The categories specified in the format were lecture, laboratory and tutorial. The instructions stated that seminars were to be included under tutorial. It was felt that the laboratory type of activity could generally be identified but that the distinction between lecture, seminar or tutorial would be arbitrary in most cases.

There are two other sources of possible error which are not easily corrected or accounted for. One concerns courses which do not align with the main pattern of instructional activities and thus could not be included in this analysis. Research courses, reading and thesis courses, field courses and clinic courses are examples of this category. While most universities indicated courses of these types, the degree to which they may have been included is not known. It can be assumed that such courses constitute a very small portion of the instructional activities of a university.

A second source of error that could not be isolated relates to an administrative feature referred to as "cross-listing". In most universities each faculty produces a listing of courses available to students enrolled in that faculty. Quite often a course may be offered to students of other faculties. Even though the instructional activities are combined, each faculty may choose to identify the course differently. During our visits to the universities this feature was pointed out, and the universities were requested to treat such courses as a single course. Because of the number of courses it is doubtful if all such courses were identified. The error due to duplication of such courses is probably very small.

The data collection instrument was designed to collect information which would describe the main core of instructional activities of the universities. For this reason the data should not be related to either a section of the student body or to a segment of the faculty of the universities. For example, the activities described in the data do not pertain to either full-time or part-time students only. Where the part-time students were integrated in the activities of the full-time students, they were included. In the smaller universities this tended to be the case. Similarly, the portion of instructional activities of medical students that could be described under the desired format was estimated to be very small (e.g. McMaster's submission omitted this area entirely).

Approximately twelve thousand* courses were included in the analysis. Appendix 2 contains a description of the error checking routine used in processing these data. Approximately 2% of the courses were deleted by this routine.

Analytical Measures

Each activity of each course is capable of generating three descriptive values. If all activities are examined in these three ways, three distinct distributions can be formed. For each activity of each course these three values are:

1) Number of Course Sections - the number of sections
2) Number of Section Hours (per week) - the number of sections multiplied by the hours per week of scheduled activity.
3) Number of Student Hours (per week) - the number of students multiplied by the hours per week of scheduled activity.

The mean section size is defined as the number of student hours within a category divided by the number of section hours within the same category.

Parameters of Section Size

The analysis classified the data according to three parameters; discipline group, course level and type of instructional activity.

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*Data were collected at Brock, Carleton, Carleton - St. Patrick's, Guelph, Lakehead, Laurentian, McMaster, Ottawa, Toronto, Trent, Erindale, Scarboro, Waterloo, Western, Windsor, York, York-Glendon,

The parameter discipline group, is intended to reflect the content of the course, not the department or faculty or student associated with the course. Four discipline groups based upon the DBS discipline lists were defined: humanities, social science, biological science and physical science.

As outlined in the discussion of the basic data, the parameter course level, was defined as the normal year-in-programme in which the students (or majority of students) enroll in the course. This definition was inoperable for two reasons. First, the universities for whom the definition was appropriate could not check the student characteristics of each course because of the great number of courses involved and second, as indicated previously, the programme structure of some universities does not allow the definition of a "normal" year-in-programme for each course. For these reasons, the year level reported for each course was either an assumption regarding the student component of the course or an indication of the hierarchy of the course i.e. a first course in a discipline, a second course, an advanced course, or a graduate course. The level of courses in dentistry, law, medicine and veterinary science/medicine were taken as the year levels of students as reported to DUA (form UA3, page 1). In analysing the data, four groups of course levels were defined:

1) Introductory (Yrs. 0-1) - to indicate courses of an introductory nature generally requiring no previous university courses (year level 0 indicates a preliminary or qualifying course).

2) Intermediate (Yrs. 2-3) - to indicate courses which may or may not require prerequisite courses at the university level.

3) Advanced (Yrs. 4-6) - to indicate courses at an advanced level of study yet still offered primarily to undergraduate students.

4) Graduate (Yr. 7) - to indicate courses offered primarily to graduate students.

While it is felt that analysis of the data is permissible in these groupings, because of the inherent shortcomings of the data we suggest a not too precise interpretation of results.

The type of instructional activity for the course constitutes the third parameter. Two main classes of instructional activity could be isolated from the basic data: (1) lecture, seminar, tutorial and (2) laboratory. As mentioned above, it was not possible to identify separately activities known traditionally as lecture and tutorial. It was considered important to report the laboratory category separately since the sectioning policies and the resources dedicated to these two categories can be quite different. In addition, the cost of laboratory facilities makes separate estimates of their utilization imperative. While laboratory usage cannot be fully developed in the system report, it is of significance to the individual universities for their internal review.

Pattern of Section Sizes

The distributions of section sizes by discipline group, course level and instruction type are presented in Appendix 3. This part of the paper summarizes the main points presented in detail there.

Table 1 presents a summary of total section hours, student hours and overall mean section sizes classified by discipline group, course level and instruction type. In interpreting the results, two additional points should be made:

1) The primary value of the results of this study at the system level is the definition of base values regarding the pattern of section sizes from which comparison can be made in later years.

2) Although the values for section hours and student hours on Table 1 indicate otherwise, it is estimated that the error due to processing is ± 40 hours.

From Table 1 it can be seen that at the undergraduate level courses in the humanities consistently showed the smallest mean section sizes for all levels and types of instructional activities. The largest mean section sizes for undergraduate courses were found in the biological sciences for the combined lecture, seminar and tutorial category while in the laboratory category the mean section sizes of the social sciences, physical sciences and biological sciences were approximately equal at each level of instruction. At the graduate level the

TABLE 1
SUMMARY OF SECTION SIZE DATA
REPRESENTATIVE OF ONE WEEK FOR FALL, 1969

	LECTURE-SEMINAR-TUTORIAL			LABORATORY			TOTAL		
	Section Hours	Student Hours	Mean Section Size	Section Hours	Student Hours	Mean Section Size	Section Hours	Student Hours	Mean Section Size
INTRODUCTORY (Yrs. 0-1)									
Humanities	5,760	144,980	25.2	1,170	18,110	15.5	6,930	163,090	23.5
Social Science	3,660	177,460	48.5	360	11,530	32.0	4,020	188,990	47.0
Biological Science	510	32,290	63.3	980	31,510	32.2	1,490	63,800	42.8
Physical Science	2,130	124,760	58.6	1,590	55,580	35.0	3,720	180,340	48.5
Total	12,060	479,490	39.8	4,100	116,730	28.5	16,160	596,220	36.9
INTERMEDIATE (Yrs. 2-3)									
Humanities	6,740	128,970	19.1	880	10,110	11.5	7,620	139,080	18.3
Social Science	7,490	276,990	37.0	900	22,420	24.9	8,390	299,410	35.7
Biological Science	1,070	49,830	46.6	1,780	39,420	22.1	2,850	89,250	31.3
Physical Science	3,670	150,280	40.9	2,510	59,710	23.8	6,180	209,990	34.0
Total	18,970	606,070	31.9	6,070	131,660	21.7	25,040	737,730	29.5
ADVANCED (Yrs. 4-6)									
Humanities	1,100	13,060	11.9	210	1,500	7.1	1,310	14,560	11.1
Social Science	2,310	47,410	20.5	320	4,050	12.7	2,630	51,460	19.6
Biological Science	700	23,450	33.5	1,090	15,620	14.3	1,790	39,070	21.8
Physical Science	1,690	28,900	17.1	1,030	13,550	13.2	2,720	42,450	15.6
Total	5,800	112,820	19.5	2,650	34,720	13.1	8,450	147,540	17.5
TOTAL UNDERGRADUATE (Yrs. 0-6)									
Humanities	13,600	287,010	21.1	2,260	29,720	13.2	15,860	316,730	20.0
Social Science	13,460	501,860	37.3	1,580	38,000	24.1	15,040	539,860	35.9
Biological Science	2,280	105,570	46.3	3,850	86,550	22.5	6,130	192,120	31.3
Physical Science	7,490	303,940	40.6	5,130	128,840	25.1	12,620	432,780	34.3
Total	36,830	1,198,380	32.5	12,820	283,110	22.1	49,650	1,481,490	29.8
GRADUATE (Yr. 7)									
Humanities	1,400	17,640	12.6	8	210	26.3	1,408	17,850	12.7
Social Science	2,740	38,890	14.2	50	540	10.8	2,790	39,430	14.1
Biological Science	470	8,390	17.9	130	1,170	9.0	600	9,560	15.9
Physical Science	2,040	15,260	7.5	110	770	7.0	2,150	16,030	7.5
Total	6,650	80,180	12.1	298	2,690	9.0	6,948	82,870	11.9

smallest mean section size was found in the physical sciences for both instructional categories. Over all discipline groups and instructional types the mean section size at the undergraduate level was 29.8. At the graduate level it was 11.9.

Figures 1, 2, and 3 present histograms depicting the percentage distributions of section hours and student hours for the undergraduate lecture-seminar tutorial groups, the undergraduate laboratory group, and all undergraduate activities respectively. From these it can be seen that at the undergraduate level approximately 77% of the lecture, seminar and tutorial activities and almost 90% of the laboratory activities were conducted in courses whose average section size was 40 or less.

Figure 4 presents the distribution of section hours for the four course levels of lecture, seminar and tutorial activities. While the volume of section hours changes by course level, the shape of the distribution remains fairly constant within these section size intervals. At the advanced and graduate course levels there is a shift towards smaller average section sizes.

Figure 5 presents the distribution of section hours of laboratory activities for the four course levels. While four distinct distributions are formed the overriding characteristic, as observed at a higher level of detail (Figure 2), is that 90% of the laboratory activities have an average section size of less than 41, regardless of the course level. As in the lecture, seminar, tutorial category, as course level increases both the average and median section size decrease.

FIGURE 1

DISTRIBUTION OF SECTION HOURS AND STUDENT HOURS
UNDERGRADUATE - LECTURE, SEMINAR, TUTORIAL

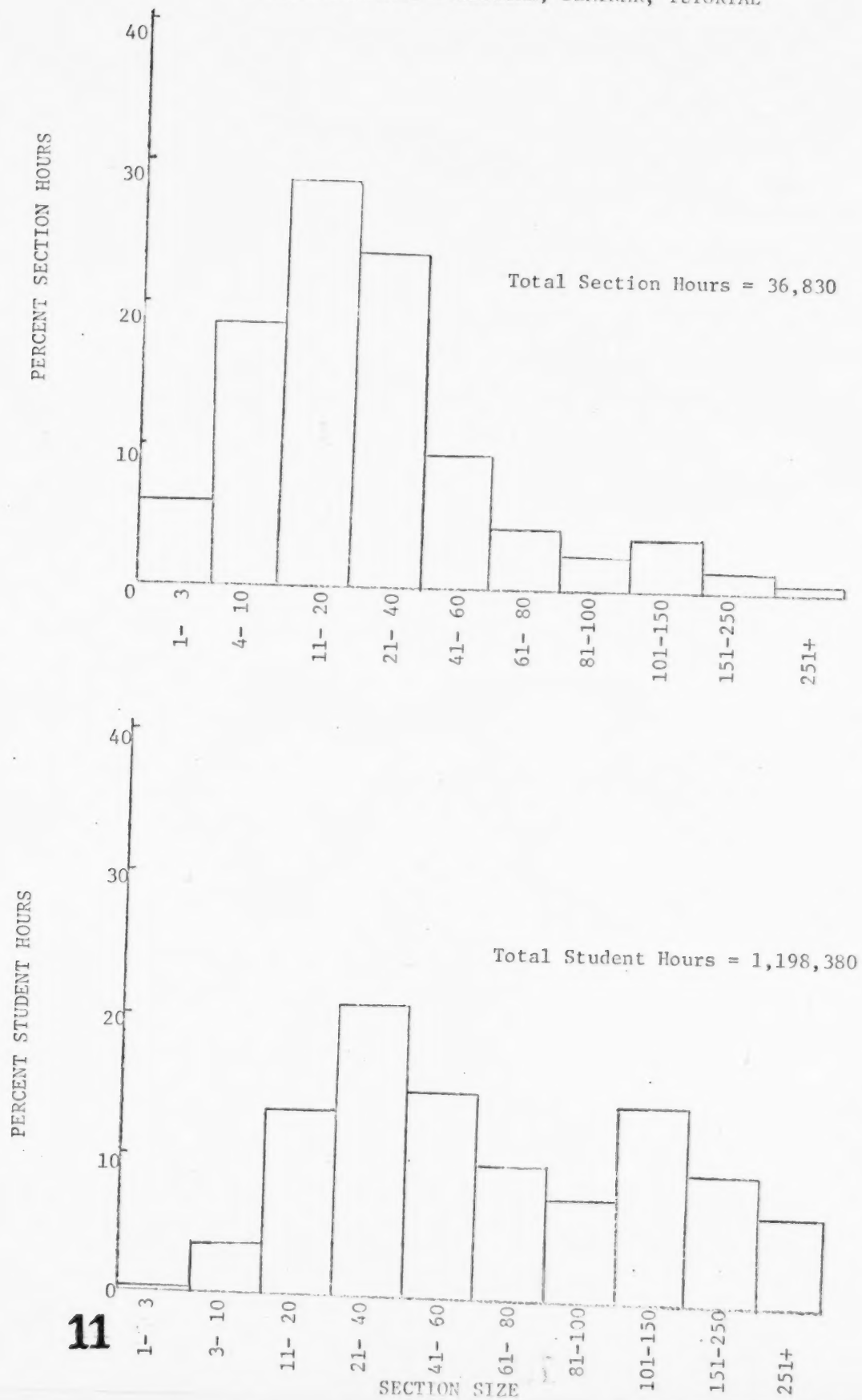


FIGURE 2

DISTRIBUTION OF SECTION HOURS AND STUDENT HOURS
UNDERGRADUATE - LABORATORY

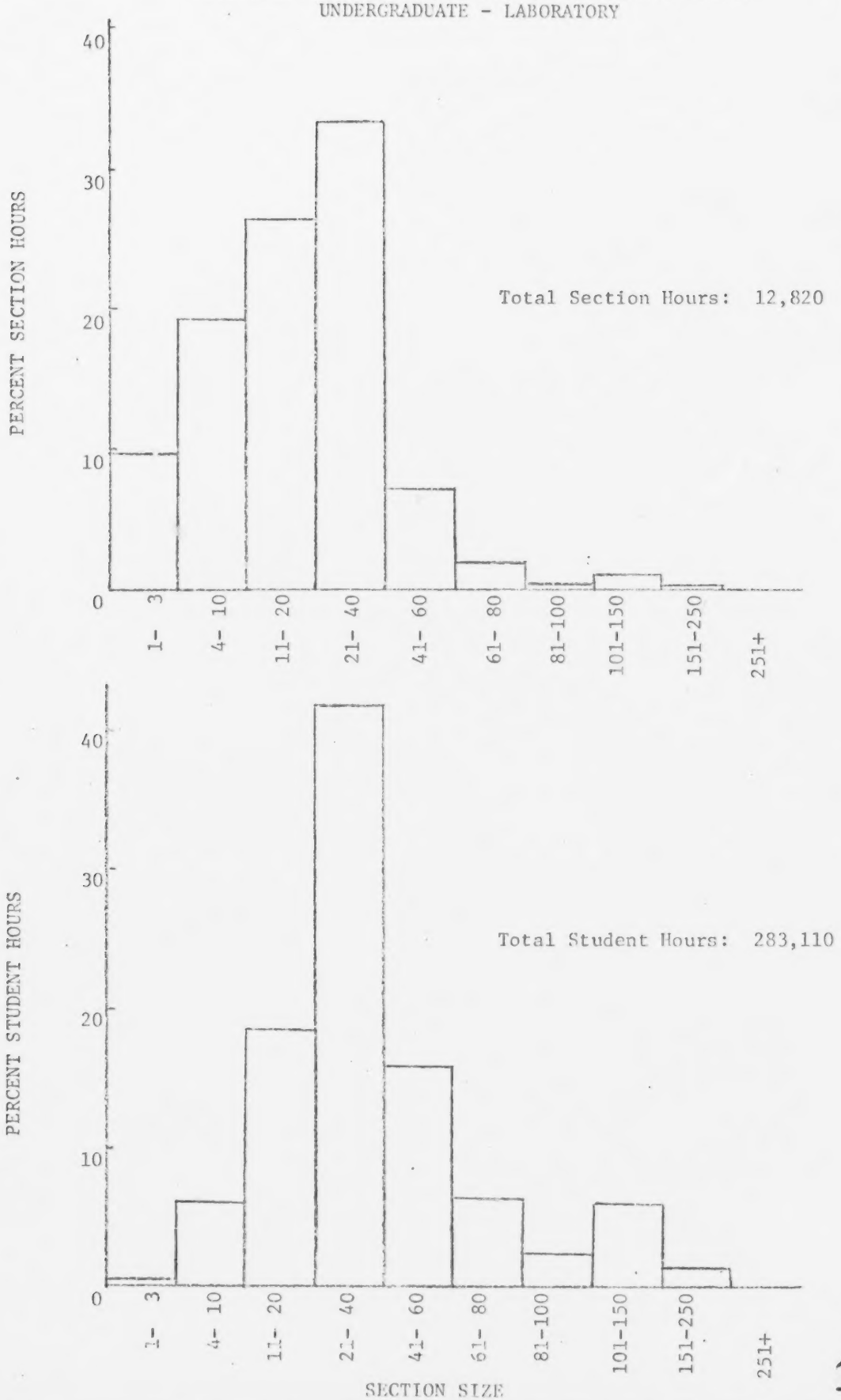
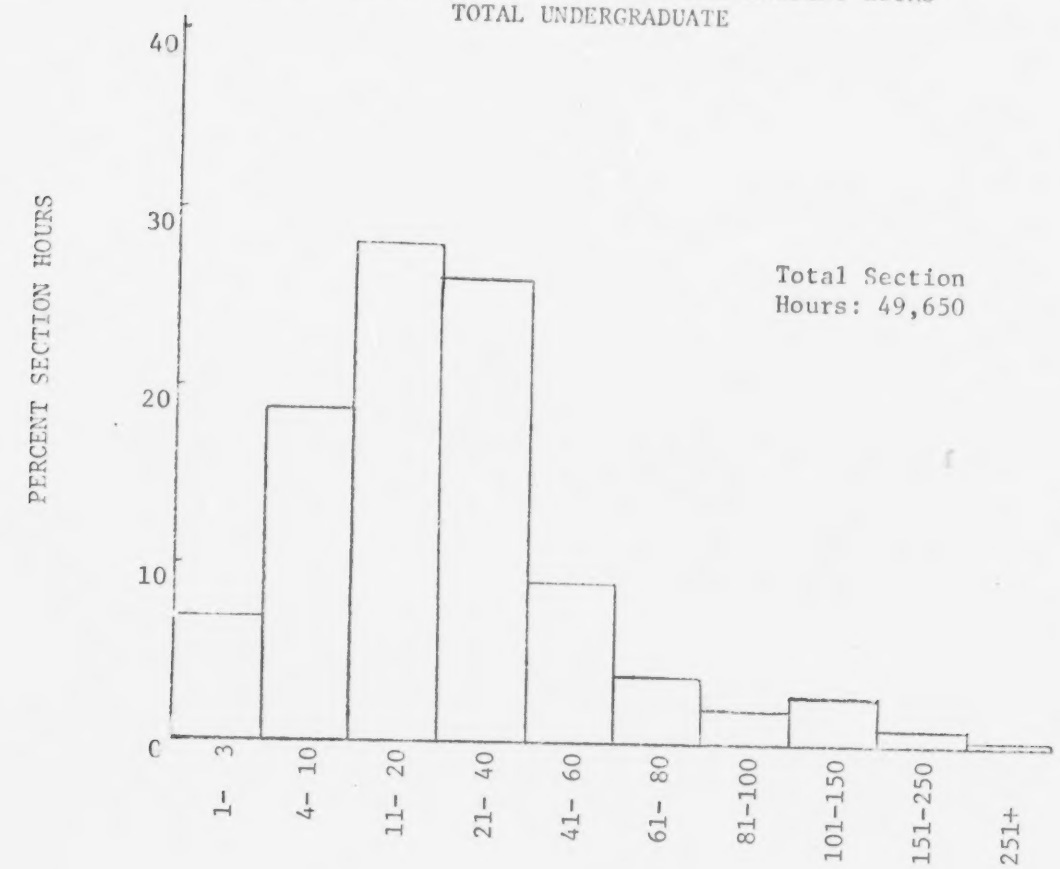


FIGURE 3

DISTRIBUTION OF SECTION HOURS AND STUDENT HOURS
TOTAL UNDERGRADUATE



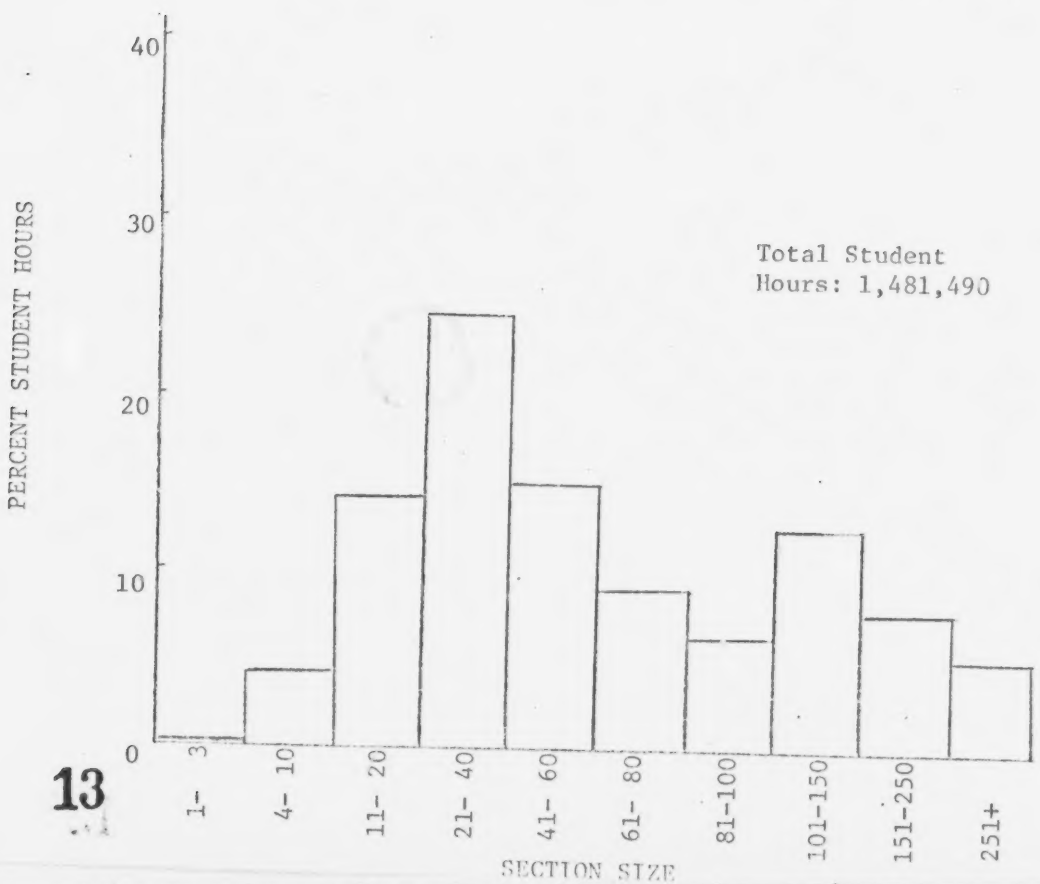


FIGURE 4

DISTRIBUTION OF SECTION HOURS
LECTURE, SEMINAR, TUTORIAL
BY COURSE LEVEL

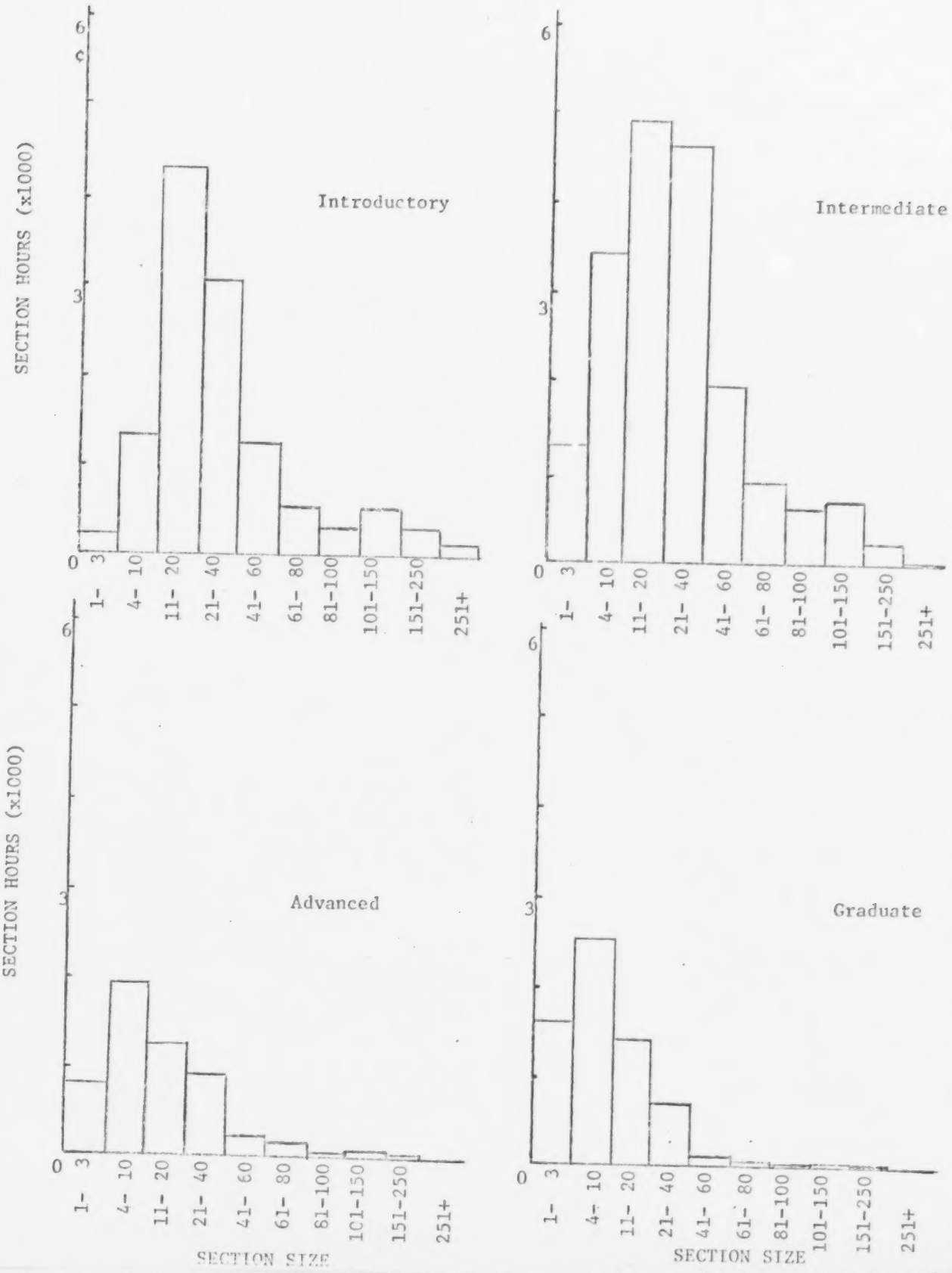
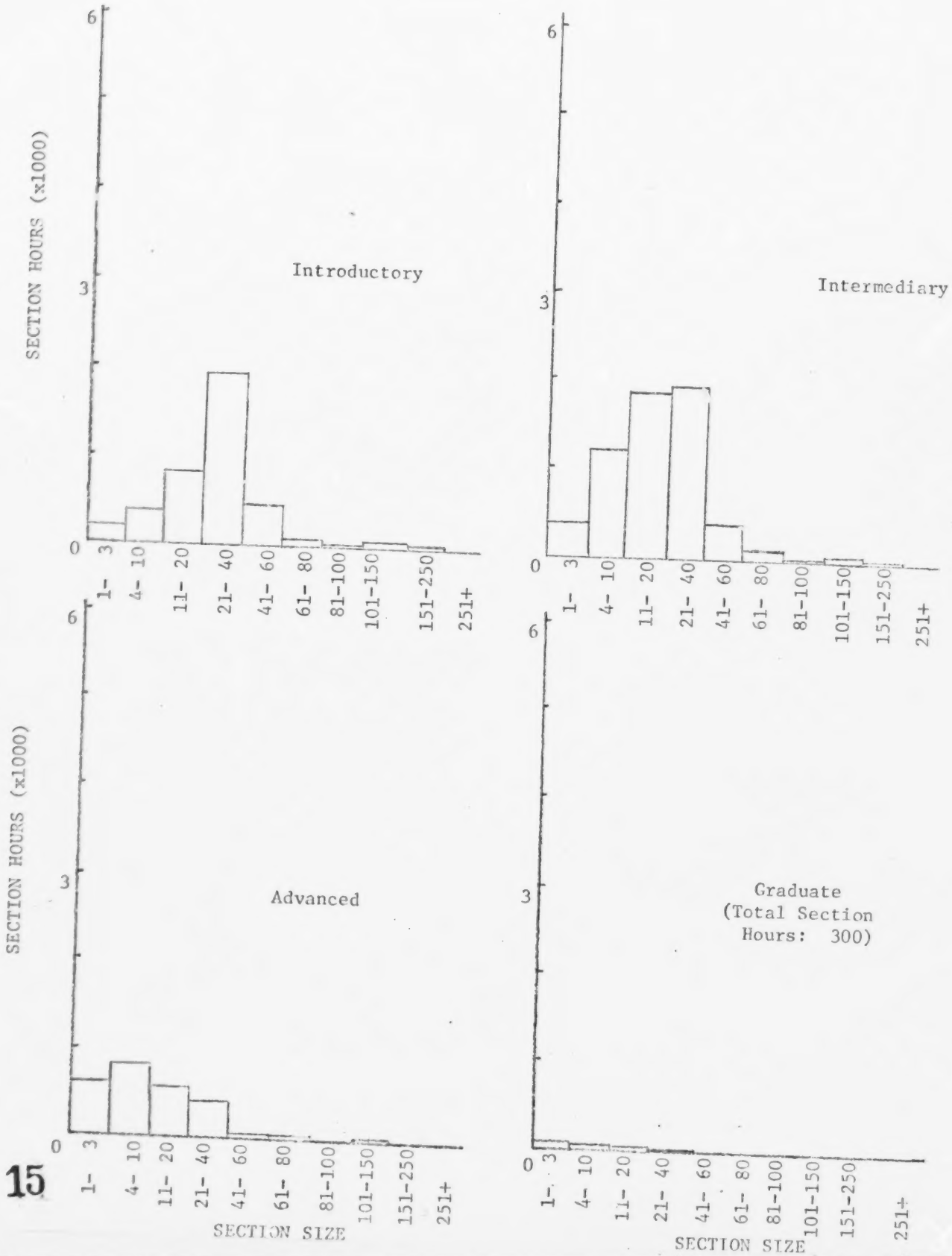


FIGURE 5

DISTRIBUTION OF SECTION HOURS
LABORATORY
BY COURSE LEVEL



Figures 6 and 7 show distributions of section hours by discipline group for lecture, seminar, tutorial, and laboratory categories respectively. From Figure 7, it can be seen that approximately 90% of laboratory activities are conducted in average section sizes of less than 41 irrespective of discipline group. The orientation of the humanities and social sciences to "classroom" activities is in sharp contrast to the tendency of biological and physical sciences to devote approximately equal time to both "classroom" and laboratory activities. In addition, in the combined lecture, seminar, tutorial category in Figure 6 the physical and biological sciences tend to show relatively greater dispersions of section sizes.

As stated above, at the university level the output of this study can be used to estimate the usage of laboratory facilities. There are additional values that can be derived from this study. For example, section hours can be taken as a rough estimate of the resources dedicated to instructional activities. The load placed against these resources can be approximated by the student hours. By matching resources to load for various section size categories a possible measure of efficiency can be obtained. Figure 8 is in the format of Figure 3 showing the percentage distributions of section hours and student hours for all undergraduate instructional activities. At the end points of these distributions are found the relative extremes for this measure of efficiency. In the section size interval 1-3 approximately 7% of the resources

FIGURE 6

DISTRIBUTION OF SECTION HOURS
LECTURE, SEMINAR, TUTORIAL
BY DISCIPLINE GROUP

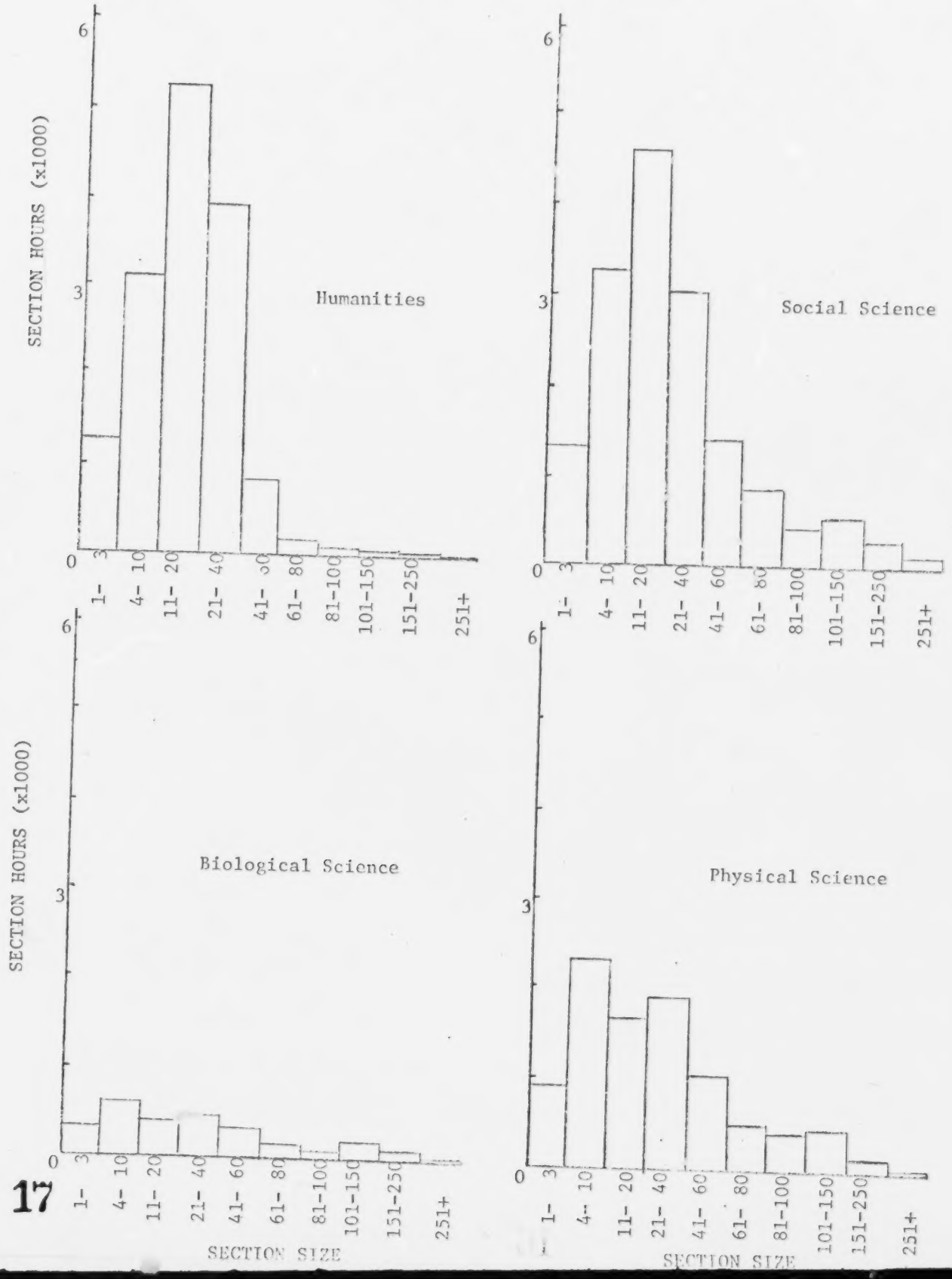


FIGURE 7

DISTRIBUTION OF SECTION HOURS
LABATORY
BY DISCIPLINE GROUP

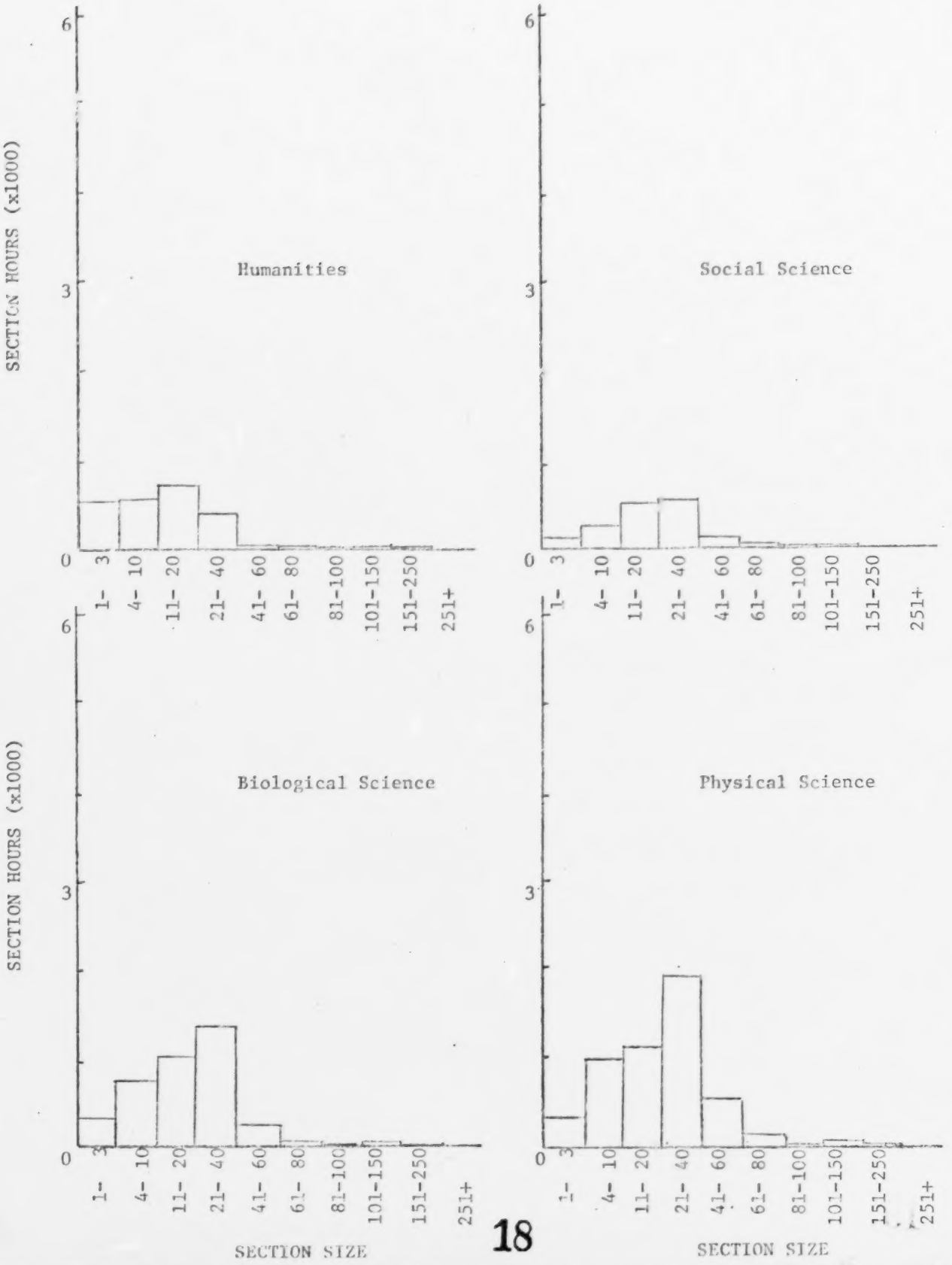
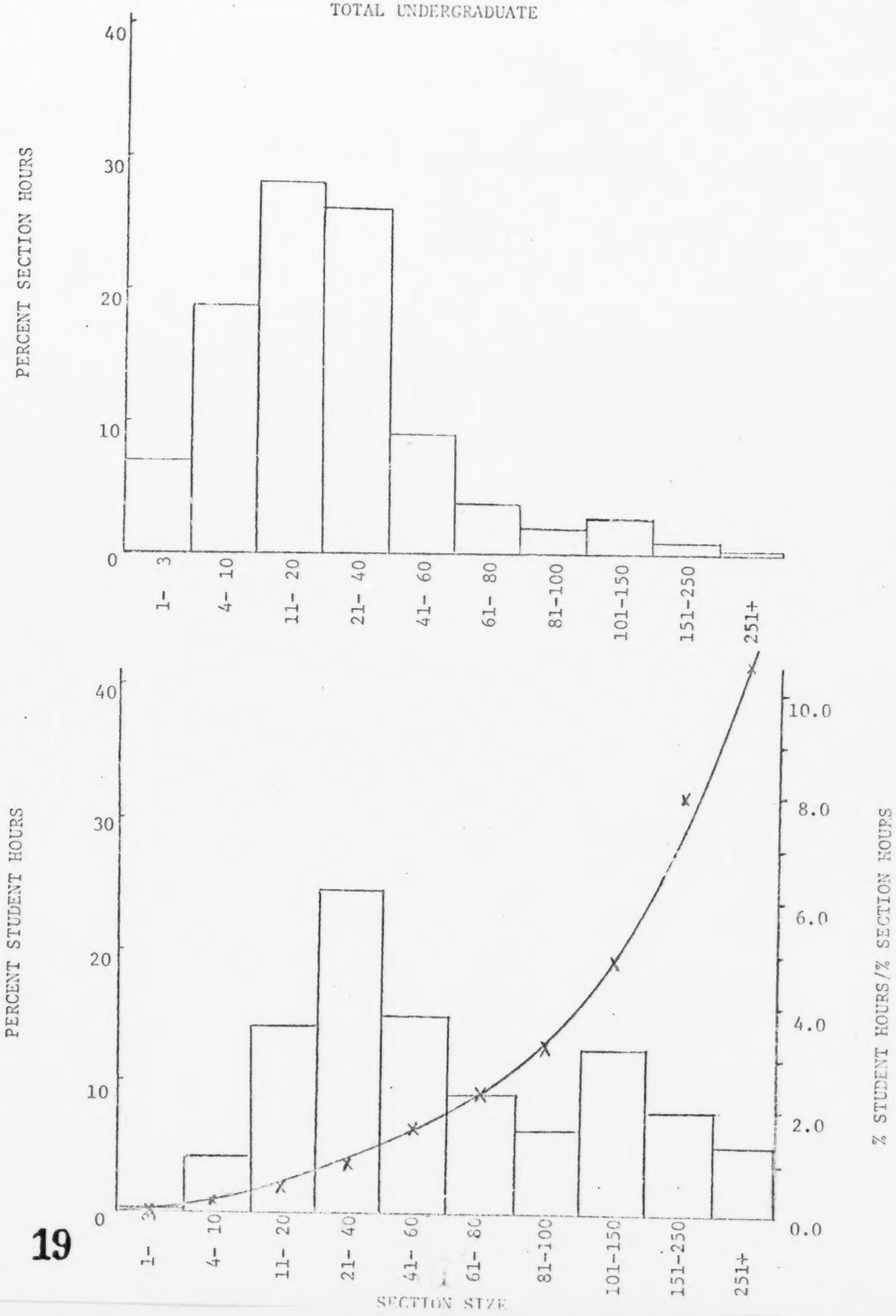


FIGURE 8

DISTRIBUTION OF SECTION HOURS AND STUDENT HOURS
TOTAL UNDERGRADUATE



(section hours) are dedicated to less than 1% of the load (student hours). Similarly, those section size intervals greater than 100 show 6% of the resources allocated to 25% of the load. Superimposed on the distribution of student hours is a curve showing how this measure behaves over the range of section size intervals. Each point is defined by dividing the percentage of student hours by the percentage of section hours for the same section size interval. While such a measure of efficiency over-simplifies the processes of resource allocation, at a lower level of detail it would constitute one measure in an analysis of alternate patterns of operation.

Tests of significance have not been performed for all categories of the data. However, at the university level, it may be appropriate that such testing should be done. For example, it can be shown at the system level that the distributions and mean section sizes for Graduate Physical Sciences are significantly different from those describing total graduate instructional activities. At the university level where the pattern of activities can be controlled, such tests of significance could be very meaningful.

APPENDIX 1

INSTRUCTIONS FOR COLLECTION OF SECTION SIZE DATA

COMMITTEE OF
PRESIDENTS OF UNIVERSITIES
OF ONTARIO

COMITÉ DES
PRÉSIDENTS D'UNIVERSITÉ
DE L'ONTARIO

230 BLOOR STREET WEST, TORONTO 181, ONTARIO
(416) 920-6865

July 14, 1970

Memorandum to: Dr. J. A. Gibson, President, Brock University
Dr. A. D. Dunton, President, Carleton University
Dr. R. J. A. Cloutier, Acting President, Laurentian University
Dr. H. G. Thode, President, McMaster University
Dr. John J. Deutsch, Principal, Queen's University
Dr. J. F. Leddy, President, University of Windsor
Mr. D. M. Jamieson, Research Advisor, Guelph University
Dr. R. N. Shervill, Executive Assistant to the President, University of Western Ontario
Mr. B. Mason, Executive Assistant to the President, Lakehead University
Dr. P. Morand, Assistant Vice-Rector, University of Ottawa
Mr. J. F. Sword, Executive Vice-President, University of Toronto
Mr. J. E. Leishman, Comptroller, Trent University
Dr. H. E. Petch, Vice-President (Academic), University of Waterloo
Dr. A. C. Johnson, Vice-President (Academic Services), York University

From: Director of Research

Subject: Analysis of section size information

At the 53rd meeting of the Committee of Presidents of Universities of Ontario on December 16, 1969, Dr. D. T. Wright, Chairman of the Committee on University Affairs, indicated that he would like to see distributions of class sizes in appropriate groupings of class size ranges. Such groupings could be, for example, 0-3, 4-10, 11-20, 21-40, 41-80, 81-160, 161-300, and greater than 300.

At the 57th meeting in April 1970 it was agreed that the project should be undertaken and coordinated by the Research Division of CPUO. A commitment was made to Dr. Wright to deliver the information by November 1970.

Because of the difficulty in collecting this information in time for the university meetings with CUA this fall, it seems logical to collect data from 1969-70 records and undertake to provide updated information each year thereafter. The data collection formats and instructions have been designed with these purposes in mind.

There are basically three ways to provide the information -

(1) each university to provide the information in aggregated form of its own choosing;

(2) each to provide it according to standardized procedures for aggregation; and

(3) each to provide detailed information which will be aggregated by the CPUO Research Division according to standardized procedures.

Subject to your approval and comment, we suggest the third alternative as the most appropriate this year.

It is essential for information to be collected in a consistent way in all universities or invidious comparisons are invited. It appears to us that the only way to ensure consistency is for each university to collect basic enrolment data by course, course number, year level, hours per week, weeks per year, and number of sections per course. This office could then aggregate the course information into the familiar DBS groupings of Appendix A in a consistent way (as in Figure 1).

The necessary enrolment data should be available for 1969-70 in the records at each university. We would ask each university to provide the detailed information as in the attached format. Provision of the detailed information will enable us to display class enrolment information as frequency distributions by university and/or discipline group according to year level and whether lecture, lab, tutorial or total. The standardized collection and display procedures developed in the process will be written up and furnished to the universities, so that the university can perform this task according to standard procedures in future years.

Definitions for Completion of Format I

COURSE - includes any formal, organized, instructional activity subject to the following qualification:

(1) include only courses in which the majority of students enrolled are covered by the UA-3 enrolment audit.

COURSE NUMBER - the alphabetic and/or number code assigned by the university to each course.

YEAR LEVEL - the year of a programme in which the course is normally offered. For example, a course taught to engineering students in their second year would be considered a second year level course. This would still be the case if there were several students included from the third year of a programme. In other cases the programme level of the majority of students should prevail.

- the levels should run from one through six with the seventh level reserved for all graduate courses.

HOURS PER WEEK - number of formal hours per week that the student is taking instruction or for which he receives credit.

NUMBER OF WEEKS - number of weeks during the session (year, semester) that the student is taking instruction in the particular course.

COURSE ENROLMENT - the number of students enrolled in each course. If a course includes both lecture and laboratory then the course enrolment must be specified under each category. The tutorial category covers both tutorials and seminars. The universities should apply their own definitions in differentiating between lectures and tutorials. Generally speaking, a lecture features the presentation of instructional materials by a member of the academic staff. In contrast, students may present materials for discussion in tutorials. Only seminars and tutorials specified by the course outline should be included.

NUMBER OF SECTIONS - the number of subdivisions into which the total course enrolment is divided for the purpose of conducting the formal instruction. A course with an enrolment of 300 may require meeting as one group of 300 for a lecture and as 30 groups of 10 for tutorials. These arrangements would be recorded as 1 lecture section and 30 tutorial sections.

Figure 2 is an example of how Form 1 would be completed for the following course:

CHEMISTRY 600 - given by the Department of Chemical Engineering to first year students. Enrolment of 200 receives 2 hours of lectures per week and 3 hours of laboratory instruction throughout the 28-week session. The lecture is divided into 4 sections, the laboratory into 10.

Completed forms should be returned to the Committee of Presidents' office by September 15, 1970, to allow for completion of the report by October 1.

Messrs. Ivor Thompson and John Long are coordinating this project for the CPUO Secretariat and will be contacting the liaison officers very shortly to discuss the project. They may be contacted at this office, telephone 416-920-6865, if there are any questions prior to their visits.

Bertrand L. Hansen

Bertrand L. Hansen

/g

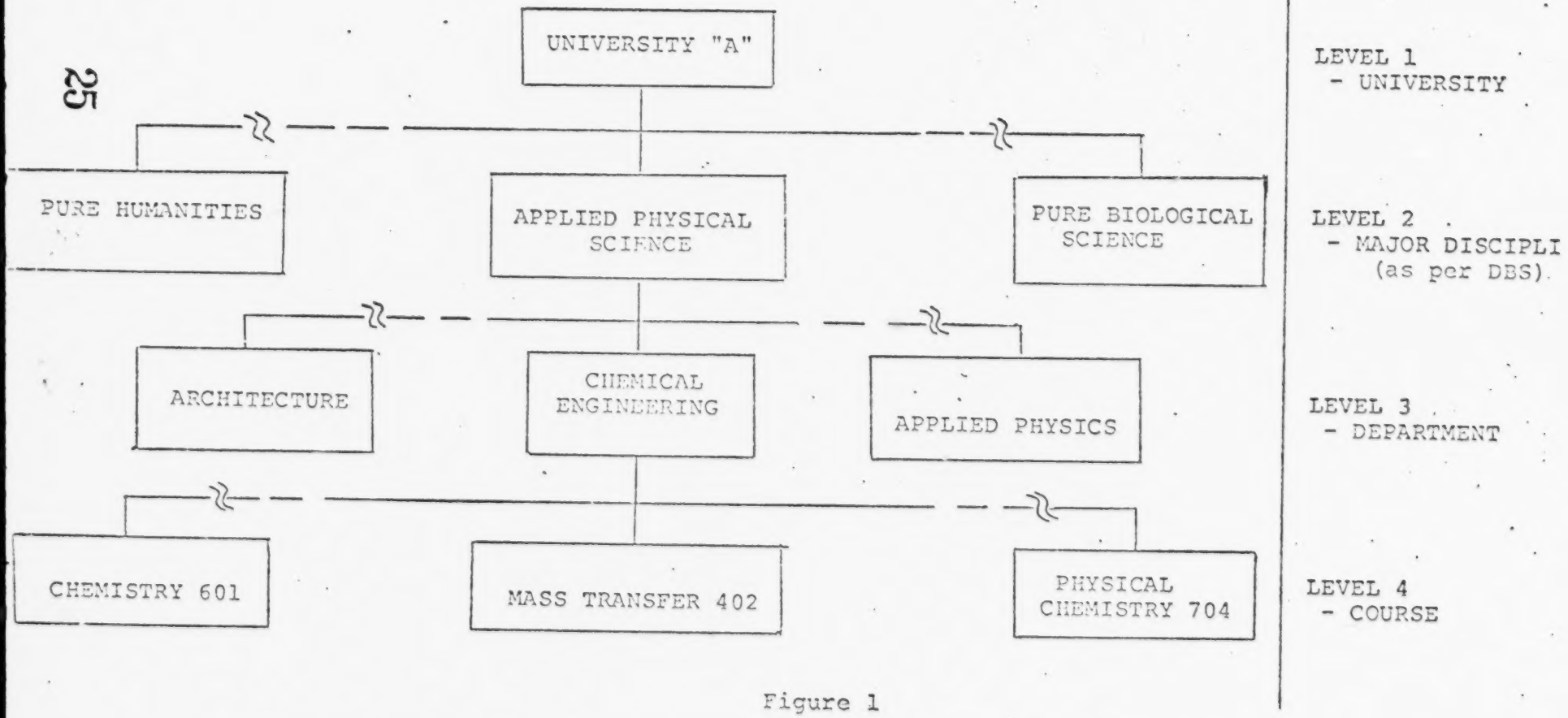


Figure 1

Illustration of Breakdown of University Disciplines, Departments and Courses

DISCIPLINE: _____

YEAR: 1969-70

Course and Course Number	Year Level	Hours per Week			Number of Weeks	Course Enrolment			Number of Sections		
		Lec.	Lab.	Tut.		Lec.	Lab.	Tut.	Lec.	Lab.	Tut.

FORM 1

DISCIPLINE: APPLIED PHYSICAL SCIENCE

YEAR: 1969-70

Course and Course Number	Year Level	Hours per Week			Number of Weeks	Course Enrolment			Number of Sections		
		Lec.	Lab.	Tut.		Lec.	Lab.	Tut.	Lec.	Lab.	Tut.
Chemistry 600	1	2	3		28	200	200		4	10	

EXAMPLE OF FORM 1

FIGURE 2

APPENDIX A

DBS DISCIPLINE GROUPINGS

APPLIED SOCIAL SCIENCE

- Commerce, Business Administration (including Accounting, Industrial Relations)
- Education (including Child Study)
- Household Science, Home Economics (including Dietetics)
- Law
- Physical and Health Education
- Secretarial Science
- Social Work
- Applied Social Science, n.e.c. (including Public Administration)

PURE BIOLOGICAL SCIENCE

- Botany
- Zoology (including Anatomy, Histology, Embroyology, Entomology, Palaeontology, Physiology)
- Pure Biological Science, n.e.c. (including Genetics, Natural History, Microbiology, Radiation Biology)

APPLIED BIOLOGICAL SCIENCE

- Agriculture (including Animal Science, Soil Science)
- Dentistry
- Forestry
- Hygiene, Public Health
- Medicine (including Medical Technology)
- Nursing
- Optometry
- Pharmacy
- Physio and Occupational Therapy (including Rehabilitation)
- Veterinary Medicine, Veterinary Science
- Applied Biological Science, n.e.c. (including Fisheries, Marine Science, Oceanography)

PURE PHYSICAL SCIENCE

- Chemistry (including Biochemistry)
- Geology (including Mineralogy)
- Mathematics (including Astronomy, Geodesy, Statistics)
- Physics (including Biophysics, Geophysics, Mathematical Physics)
- Pure Physical Science, n.e.c.

APPLIED PHYSICAL SCIENCE

- Architecture (including Town Planning)
- Engineering
  - Chemical Engineering
  - Civil Engineering (including Agricultural Engineering, Architectural Engineering, Forestry Engineering, Structural Engineering)
  - Electrical Engineering
  - Mechanical Engineering
  - Mining Engineering, (including Geological Engineering, Metallurgical Engineering, Petroleum Engineering)
- Engineering, n.e.c.
- Applied Physical Science, n.e.c. (including Aerophysics, Applied Mathematics, Applied Physics)

PURE HUMANITIES

Fine Arts (History and Appreciation)
Art (including Archaeology, Architecture)
Drama
Music
Fine Arts, n.e.c.
Classical Languages and Literature
Greek
Hebrew
Latin
Classical Languages and Literature, n.e.c.
(Including Medieval Literature, Oriental Languages)
Modern Languages and Literature
English
French
German
Russian
Spanish
Modern Language and Literature, n.e.c. (including Letters, Linguistics, Romance Languages, Slavic Languages, Italian, Portuguese)
Philosophy (including Ethics, Logic, Natural Theology)
Religion (including Religious Knowledge)
Pure Humanities, n.e.c. (including East Asiatic Studies, Islamic Studies, Slavic Studies, Celtic Studies, Near Eastern Studies)

APPLIED HUMANITIES

Journalism
Library Science
Theology, Divinity (including Canon Law)
Music
Fine and Applied Art (including Drama, Elocution)
Applied Humanities, n.e.c.

PURE SOCIAL SCIENCE

Anthropology
Economics and Political Science
Economics
Political Science
Economics and Political Science, n.e.c.
Geography
History
Psychology
Sociology
Pure Social Science, n.e.c.

APPENDIX 2

.DATA CHECKING ROUTINE

Data Checking Routine

As part of the programme developed to process the data, a data checking routine deleted approximately 2% of the total submission of twelve thousand courses. This routine operated in the following steps:

1) For each course it identified those activities with a positive enrolment.
2) For these activities it checked to see if the hours per week were defined.
3) For these activities it checked to see if the number of sections were defined.
4) It inspected the remaining data elements for acceptable values.

An entire course was deleted if:

1) The hours per week of an activity with a positive enrolment were not defined.
2) The ratio for any activity of enrolment to number of sections was less than 1.0.
3) Any of the remaining elements were improperly defined. (e.g. the year level was 8).

The above steps attempted to isolate any basic errors in the data, such as keypunching or omission of part of the elements pertaining to a course. In addition two further constraints were added in the attempt to delete courses outside the main core of instructional activities:

1) An activity of a course was deleted if the hours per week of activity was greater than 10. Generally these were laboratory activities, some with as high as 60 hours per week. It was felt that the resources dedicated to such activities were quite different than those of the main core of laboratory activities and so should not be included.

2) An entire course was deleted if the number of weeks of duration was less than 8. The analysis was to be representative of the activities of the Fall term and so some lower limit had to be placed upon this element of the data. Although somewhat arbitrary, the definition of "short" courses as such admitted only those courses taught through the majority of the term.

If the number of sections of an activity were not defined a default value of one was assumed. This option was exercised in approximately 3% of the twelve thousand courses. While it is estimated that this value was generally correct, where it was incorrect it would have the effect of understating both the Number of Course Sections and Number of Section Hours. The error introduced by this default value is felt to be more acceptable than omission of the courses concerned.

APPENDIX 3

DISTRIBUTION OF SECTION SIZES

DISTRIBUTION OF SECTION SIZES

TABLES 1-16

1) The data are based upon the submissions in response to the request as outlined in Appendix 1.

2) Submissions were received from Brock, Carleton, Carleton-St. Patrick's, Guelph, Lakehead, Laurentian, McMaster, Ottawa, Toronto, Erindale, Scarboro, Trent, Waterloo, Western, Windsor, York, York-Glendon.

3) The submission from Windsor did not identify the tutorial segment of instructional activities (seminars were included).

4) The submission from McMaster did not identify the instructional activities relating to medicine.

5) Associated with each section size interval are Tables 1 to 16 there is an error due to processing for Number of Section Hours and Number of Student Hours of ± 5 hours.

TABLE 1

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group HUMANITIES

Course Level INTRODUCTORY (Yrs. 0-1)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	30	1.2	90	1.6	190	0.1	111	15.3	150	12.8	170	0.9
4-10	380	14.6	690	12.0	5,040	3.5	167	23.0	270	23.1	2,110	11.7
11-20	1,202	46.1	2,570	44.6	38,430	26.5	281	38.8	450	38.5	7,300	40.3
21-40	693	26.6	1,700	29.5	47,980	33.1	155	21.4	290	24.8	7,870	43.5
41-60	162	6.2	420	7.3	20,180	13.9	10	1.4	10	0.9	600	3.3
61-80	61	2.3	120	2.1	8,400	5.8	1	0.1	1	0.1	60	0.3
81-100	22	0.8	60	1.0	5,430	3.7	0	0.0	0	0.0	0	0.0
101-150	27	1.0	50	0.9	6,210	4.3	0	0.0	0	0.0	0	0.0
151-250	23	0.9	40	0.7	7,980	5.5	0	0.0	0	0.0	0	0.0
251+	8	0.3	20	0.3	5,140	3.5	0	0.0	0	0.0	0	0.0
TOTAL	2,608	100.0	5,760	100.0	144,980	100.0	725	100.0	1,171	100.0	18,110	100.0

TABLE 2

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group SOCIAL SCIENCE

Course Level INTRODUCTORY (Yrs. 0-1)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	9	0.4	20	0.5	50	0.0	0	0.0	0	0.0	0	0.0
4-10	253	11.1	390	10.7	2,470	1.4	24	11.1	30	8.3	310	2.7
11-20	1,086	47.7	1,390	38.0	19,700	11.1	50	23.1	60	16.7	1,000	8.7
21-40	381	16.7	680	18.6	20,520	11.6	93	43.1	190	52.8	5,570	48.3
41-60	204	9.0	380	10.4	19,060	10.7	41	19.0	60	16.7	3,110	27.0
61-80	75	3.3	190	5.2	13,590	7.7	7	3.2	20	5.6	1,150	10.0
81-100	58	2.5	150	4.1	13,450	7.6	0	0.0	0	0.0	0	0.0
101-150	102	4.5	220	6.0	27,440	15.5	0	0.0	0	0.0	0	0.0
151-250	61	2.7	140	3.8	27,110	15.3	1	0.5	2	0.6	390	3.4
251+	46	2.0	100	2.7	34,070	19.2	0	0.0	0	0.0	0	0.0
TOTAL	2,275	100.0	3,660	100.0	177,460	100.0	216	100.0	362	100.0	11,530	100.0

TABLE 3

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group BIOLOGICAL SCIENCE

Course Level INTRODUCTORY (Yrs. 0-1)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	0	0.0	0	0.0	0	0.0	8	2.8	50	5.1	160	0.5
4-10	115	35.5	110	21.6	910	2.8	2	0.7	10	1.0	40	0.1
11-20	61	18.8	70	13.7	1,050	3.3	48	17.0	150	15.3	2,380	7.6
21-40	48	14.8	100	19.6	2,870	8.9	167	59.2	610	62.2	18,190	57.7
41-60	33	10.2	80	15.7	3,960	12.3	36	12.8	110	11.2	5,490	17.4
61-80	9	2.8	20	3.9	1,220	3.8	9	3.2	20	2.0	1,600	5.1
81-100	10	3.1	20	3.9	1,710	5.3	7	2.5	20	2.0	2,040	6.5
101-150	20	6.2	50	9.8	5,630	17.4	5	1.8	10	1.0	1,610	5.1
151-250	16	4.9	40	7.8	7,980	24.7	0	0.0	0	0.0	0	0.0
251+	12	3.7	20	3.9	6,960	21.6	0	0.0	0	0.0	0	0.0
TOTAL	324	100.0	510	100.0	32,290	100.0	282	100.0	980	100.0	31,510	100.0

TABLE 4

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group PHYSICAL SCIENCE

Course Level INTRODUCTORY (Yrs. 0-1)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	3	0.3	10	0.5	10	0.0	0	0.0	0	0.0	0	0.0
4-10	142	12.0	160	7.5	870	0.7	49	7.1	70	4.4	450	0.8
11-20	234	19.7	320	15.0	5,360	4.3	82	11.8	230	14.5	3,870	7.0
21-40	339	28.5	600	28.2	17,710	14.2	379	54.5	860	54.1	22,420	40.3
41-60	190	16.0	380	17.8	19,650	15.8	117	16.8	280	17.6	13,700	24.7
61-80	92	7.7	220	10.3	15,490	12.4	27	3.9	70	4.4	4,600	8.3
81-100	34	2.9	90	4.2	7,940	6.4	9	1.3	20	1.3	2,020	3.6
101-150	94	7.9	210	9.9	26,100	20.9	27	3.9	50	3.1	5,990	10.8
151-250	45	3.8	110	5.2	21,000	16.8	5	0.7	10	0.6	2,530	4.6
251+	15	1.3	30	1.4	10,630	8.5	0	0.0	0	0.0	0	0.0
TOTAL	1,188	100.0	2,130	100.0	124,760	100.0	695	100.0	1,590	100.0	55,580	100.0

TABLE 5

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group HUMANITIES

Course Level INTERMEDIATE (Yrs. 2-3)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	247	8.1	600	8.9	1,250	1.0	236	41.4	300	33.5	360	3.6
4-10	782	25.7	1,560	23.2	10,770	8.4	144	25.3	210	23.5	1,450	14.3
11-20	1,013	33.3	2,180	32.3	32,990	25.6	130	22.8	250	27.9	3,650	36.1
21-40	763	25.1	1,840	27.3	50,990	39.5	53	9.3	120	13.4	2,990	29.6
41-60	165	5.4	400	5.9	19,380	15.0	1	0.2	2	0.2	80	0.8
61-80	41	1.4	90	1.3	5,970	4.6	3	0.5	3	0.3	1,190	1.9
81-100	12	0.4	30	0.5	2,900	2.3	1	0.2	4	0.5	350	3.5
101-150	17	0.7	30	0.5	3,400	2.6	1	0.2	2	0.2	220	2.2
151-250	5	0.2	10	0.2	1,060	0.8	1	0.2	4	0.5	820	8.1
251+	1	0.0	1	0.0	260	0.2	0	0.0	0	0.0	0	0.0
TOTAL	3,046	100.0	6,741	100.0	128,970	100.0	570	100.0	895	100.0	10,110	100.0

TABLE 6

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group SOCIAL SCIENCE

Course Level INTERMEDIATE (Yrs. 2-3)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	228	5.7	420	5.6	780	0.3	5	1.2	10	1.1	20	0.1
4-10	806	20.1	1,290	17.2	8,850	3.2	60	14.8	130	14.4	1,130	5.0
11-20	1,241	30.9	1,980	26.4	30,340	11.0	160	39.5	380	42.2	6,160	27.5
21-40	859	21.4	1,650	22.0	47,910	17.3	140	34.6	300	33.3	8,210	36.6
41-60	352	8.8	840	11.2	41,800	15.1	25	6.2	50	5.6	2,660	11.9
61-80	187	4.7	490	6.5	34,210	12.4	5	1.2	10	1.1	1,020	4.6
81-100	101	2.5	250	3.3	22,270	8.0	6	1.5	10	1.1	1,240	5.5
101-150	145	3.6	350	4.7	42,960	15.5	3	0.7	10	1.1	1,800	8.0
151-250	77	1.9	170	2.3	33,350	12.0	1	0.3	1	0.1	180	0.8
251+	18	0.5	50	0.7	14,520	5.2	0	0.0	0	0.0	0	0.0
TOTAL	4,014	100.0	7,490	100.0	276,990	100.0	405	100.0	901	100.0	22,420	100.0

TABLE 7

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group BIOLOGICAL SCIENCE

Course Level INTERMEDIATE (Yrs. 2-3)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	51	10.2	150	14.0	270	0.5	8	1.5	20	1.1	50	0.1
4-10	91	18.2	140	13.1	1,000	2.0	83	15.3	390	21.8	2,400	6.1
11-20	56	11.2	120	11.2	1,680	3.4	174	32.1	550	30.8	8,230	20.9
21-40	88	17.6	200	18.7	5,730	11.5	208	38.4	640	35.8	17,730	45.0
41-60	91	18.2	190	17.8	9,240	18.5	44	8.1	120	6.7	5,900	15.0
61-80	35	7.0	80	7.5	5,450	10.9	17	3.1	40	2.2	2,430	6.2
81-100	23	4.6	40	3.7	4,050	8.1	1	0.2	4	0.2	360	0.9
101-150	45	9.0	100	9.4	11,760	23.6	6	1.1	20	1.1	1,940	4.9
151-250	16	3.2	40	3.7	7,230	14.5	1	0.2	2	0.1	380	1.0
251+	3	0.6	10	0.9	3,420	6.9	0	0.0	0	0.0	0	0.0
TOTAL	499	100.0	1,070	100.0	49,830	100.0	542	100.0	1,786	100.0	39,420	100.0

TABLE 8

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group PHYSICAL SCIENCE

Course Level INTERMEDIATE (Yrs. 2-3)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	50	3.1	110	3.0	250	0.2	27	2.9	70	2.8	180	0.3
4-10	241	15.1	500	13.6	3,620	2.4	181	19.1	510	20.3	3,790	6.4
11-20	318	19.9	660	18.0	10,080	6.7	254	26.9	710	28.3	10,770	18.0
21-40	446	27.9	980	26.7	28,240	18.8	348	36.8	870	34.7	23,710	39.7
41-60	235	14.7	590	16.1	29,200	19.4	85	9.0	230	9.2	10,420	17.5
61-80	102	6.4	260	7.1	18,440	12.3	31	3.3	70	2.8	4,770	8.0
81-100	92	5.8	300	8.2	24,190	16.1	4	0.4	10	0.4	1,130	1.3
101-150	103	6.5	250	6.8	31,230	20.8	16	1.7	40	1.6	4,940	8.9
151-250	9	0.6	20	0.5	4,430	3.0	0	0.0	0	0.0	0	0.0
251+	1	0.1	2	0.0	600	0.4	0	0.0	0	0.0	0	0.0
TOTAL	1,597	100.0	3,672	100.0	150,280	100.0	946	100.0	2,510	100.0	59,710	100.0

TABLE 9

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group HUMANITIES

Course Level ADVANCED (Yrs. 4-6)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	121	22.5	270	24.6	550	4.2	71	55.0	90	42.5	110	7.3
4-10	195	36.2	400	36.4	2,460	18.8	44	34.1	80	37.7	460	30.7
11-20	117	21.7	250	22.7	3,780	28.9	7	5.4	20	9.4	340	22.7
21-40	89	16.5	160	14.6	4,350	33.3	6	4.7	20	9.4	500	33.3
41-60	14	2.6	20	1.8	1,160	8.9	1	0.8	2	0.9	90	6.0
61-80	1	0.2	1	0.1	70	0.5	0	0.0	0	0.0	0	0.0
81-100	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
101-150	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
151-250	2	0.4	4	0.4	690	5.3	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	539	100.0	1,105	100.0	13,060	100.0	129	100.0	212	100.0	1,500	100.0

TABLE 10

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group SOCIAL SCIENCE

Course Level ADVANCED (Yrs. 4-6)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	136	14.3	320	13.9	660	1.4	27	21.8	80	24.5	120	3.0
4-10	303	31.9	740	32.0	5,120	10.8	37	29.8	90	27.6	660	16.3
11-20	231	24.3	560	24.2	8,290	17.5	36	29.0	90	27.6	1,300	32.1
21-40	137	14.4	360	15.6	10,580	22.3	21	16.9	60	18.4	1,650	40.7
41-60	54	5.7	130	5.6	6,590	13.9	2	1.6	3	0.9	130	3.2
61-80	59	6.2	130	5.6	9,110	19.2	1	0.8	3	0.9	190	4.7
81-100	21	2.2	50	2.2	4,340	9.2	0	0.0	0	0.0	0	0.0
101-150	8	0.8	20	0.9	2,720	5.7	0	0.0	0	0.0	0	0.0
151-250	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	949	100.0	2,310	100.0	47,410	100.0	124	100.0	326	100.0	4,050	100.0

TABLE 11

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group BIOLOGICAL SCIENCE

Course Level ADVANCED (Yrs. 4-6)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	25	7.3	40	5.7	80	0.3	45	14.2	250	22.9	420	2.7
4-10	95	27.7	210	30.0	1,520	6.5	98	31.0	330	30.3	2,260	14.5
11-20	62	18.1	130	18.6	1,960	8.4	106	33.5	320	29.4	5,070	32.5
21-40	59	17.2	140	20.0	4,240	18.1	38	12.0	120	11.0	3,390	21.7
41-60	35	10.2	60	8.6	3,080	13.1	11	3.5	30	2.8	1,420	9.1
61-80	19	5.5	40	5.7	2,650	11.3	13	4.1	30	2.8	1,950	12.5
81-100	3	0.9	10	1.4	570	2.4	0	0.0	0	0.0	0	0.0
101-150	43	12.5	70	10.0	9,020	38.5	5	1.6	10	0.9	1,110	7.1
151-250	2	0.6	2	0.0	330	1.4	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	343	100.0	702	100.0	23,450	100.0	316	100.0	1,090	100.0	15,620	100.0

TABLE 12

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group PHYSICAL SCIENCE

Course Level ADVANCED (Yrs. 4-6)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	93	12.6	210	12.4	460	1.6	58	17.3	240	23.3	420	3.1
4-10	286	38.7	670	39.6	4,520	15.6	113	33.6	360	35.0	2,610	19.7
11-20	168	22.7	370	21.9	5,720	19.8	72	21.4	170	16.5	2,550	18.8
21-40	124	16.8	280	16.6	7,580	26.2	70	20.8	210	20.4	5,660	41.8
41-60	35	4.7	80	4.7	3,930	13.6	20	6.0	40	3.9	1,650	12.2
61-80	17	2.3	50	3.0	3,420	11.8	3	0.9	10	1.0	660	4.9
81-100	11	1.5	20	1.2	2,120	7.3	0	0.0	0	0.0	0	0.0
101-150	5	0.7	10	0.6	1,150	4.0	0	0.0	0	0.0	0	0.0
151-250	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	739	100.0	1,690	100.0	28,900	100.0	336	100.0	1,030	100.0	13,550	100.0

TABLE 13

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group HUMANITIES

Course Level GRADUATE (Yr. 7)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	162	25.1	350	24.9	660	3.7	4	50.0	4	50.0	4	1.9
4-10	236	36.5	490	34.8	3,180	18.0	0	0.0	0	0.0	0	0.0
11-20	131	20.3	290	20.6	4,100	23.2	0	0.0	0	0.0	0	0.0
21-40	100	15.5	230	16.4	6,910	39.2	0	0.0	0	0.0	0	0.0
41-60	13	2.0	40	2.8	1,950	11.1	4	50.0	4	50.0	210	98.1
61-80	1	0.2	3	0.2	190	1.1	0	0.0	0	0.0	0	0.0
81-100	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
101-150	2	0.3	2	0.1	230	1.3	0	0.0	0	0.0	0	0.0
151-250	1	0.2	2	0.1	420	2.4	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	646	100.0	1,407	100.0	17,640	100.0	8	100.0	8	100.0	214	100.0

TABLE 14

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group SOCIAL SCIENCE

Course Level GRADUATE (Yr. 7)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	249	21.6	570	20.8	1,030	2.7	8	40.0	20	40.0	40	7.4
4-10	379	32.9	880	32.1	5,860	15.1	2	10.0	10	20.0	40	7.4
11-20	320	27.8	740	27.0	11,020	28.3	5	25.0	10	20.0	150	27.8
21-40	150	13.0	390	14.2	11,460	29.5	5	25.0	10	20.0	310	57.4
41-60	33	2.9	90	3.3	4,580	11.8	0	0.0	0	0.0	0	0.0
61-80	19	1.6	70	2.6	4,670	12.0	0	0.0	0	0.0	0	0.0
81-100	1	0.1	3	0.1	270	0.7	0	0.0	0	0.0	0	0.0
101-150	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
151-250	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	1,151	100.0	2,743	100.0	38,890	100.0	20	100.0	50	100.0	540	100.0

TABLE 15

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group BIOLOGICAL SCIENCE

Course Level GRADUATE (Yr. 7)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	67	28.8	140	29.5	260	3.1	10	27.0	40	30.1	70	6.0
4-10	80	34.3	160	33.8	1,030	12.3	12	32.4	30	22.6	230	19.7
11-20	55	23.6	100	21.1	1,510	18.0	10	27.0	40	30.1	540	46.2
21-40	17	7.3	30	6.3	950	11.3	4	10.8	20	15.0	70	6.0
41-60	1	0.4	1	0.2	50	0.6	0	0.0	0	0.0	0	0.0
61-80	5	2.2	20	4.2	1,630	19.4	0	0.0	0	0.0	0	0.0
81-100	5	2.2	10	2.1	1,250	14.9	1	2.7	3	2.3	260	22.2
101-150	1	0.4	3	0.6	340	4.1	0	0.0	0	0.0	0	0.0
151-250	2	0.9	10	2.1	1,370	16.3	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	233	100.0	474	100.0	8,390	100.0	37	100.0	133	100.0	1,170	100.0

TABLE 16

SUMMARY OF SECTION SIZE DATA
ONE WEEK OF FALL TERM
TOTAL SYSTEM
1969

Discipline Group PHYSICAL SCIENCE

Course Level GRADUATE (Yr. 7)

Section Size Interval	Lecture, Seminar, Tutorial						Laboratory					
	Course Sections		Section Hours		Student Hours		Course Sections		Section Hours		Student Hours	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	234	27.6	580	28.4	1,230	8.1	12	35.3	40	35.4	80	10.4
4-10	440	51.8	1,040	51.0	6,590	43.2	18	52.9	50	44.3	330	42.9
11-20	132	15.6	320	15.7	4,600	30.1	3	8.8	20	17.7	260	33.8
21-40	39	4.6	90	4.4	2,340	15.3	1	2.9	3	2.7	100	13.0
41-60	4	0.5	10	0.5	500	3.3	0	0.0	0	0.0	0	0.0
61-80	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
81-100	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
101-150	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
151-250	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
251+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	849	100.0	2,040	100.0	15,260	100.0	34	100.0	113	100.0	770	100.0